

REMARKS

In view of the above amendments and the following remarks, favorable reconsideration of the outstanding office action is respectfully requested.

By virtue of the claim amendments, claim 1 is currently amended; claim 10 is canceled without prejudice; claims 2-9 and 11-19 remain unchanged in the application. Claims 20-27 were previously canceled in response to a restriction requirement.

1. Rejections under 35 U.S.C. § 102

I. Item 3 of the Detailed Action

In this Item, the Examiner rejected claims 1-3 and 5-15 under 35 U.S.C. § 102(b) as being anticipated by Trotter, Jr. (United States Patent No. 5,807,616 A).

With respect to claim 1, the Examiner asserted again, consistent with his rejection in the Office action of April 25, 2003, that

[Trotter, Jr.] discloses a furnace component which is exposed to a hydrocarbon containing gas stream, comprising an inorganic material (col. 5, lines 53-69); where at least a portion of the exposed inorganic material comprises a catalyst that promotes a hydrocarbon reaction to produce an olefin (col. 1, lines 16-19).

Applicants respectfully traverse this rejection.

Whereas Trotter, Jr. is concerned with inorganic coatings for metallic tubings used in thermal cracking processes, it nonetheless does not disclose the subject matter of claim 1, as amended, of the present application. Column 1, lines 16-22 of Trotter, Jr. are provided as follows:

The invention is concerned with improvements in the thermal cracking of hydrocarbons, such as ethane, propane, naphtha, or gas oil to form olefins, such as ethylene, propylene, or butanes. It is particularly concerned with avoiding, or at least lessening, the formation of carbon deposits, commonly referred to as coke, on a reactor element wall during a thermal cracking process.

From the language of this paragraph, Applicants do not see any explicit disclosure as to a catalyst on the at least a portion of the exposed inorganic material.¹ Indeed, Trotter, Jr.

¹ As is well known in the field of catalyst, a solid phase catalyst functions by facilitating reactions on the inner or outer surfaces of the catalyst. When a catalytically active component is carried by a solid phase carrier material, regardless of whether the component is carried within the body of the carrier material, only the catalyst component exposed to the reaction, i.e., that which is present in (or carried on) the inner or outer surfaces of the

does not contain a disclosure of a catalyst that promotes the hydrocarbon reaction to produce olefin. Therefore, the Examiner must regard this paragraph as implicitly disclosing such catalyst. Applicants respectfully disagree with this reading. Trotter, Jr. is concerned with using the inorganic coating to inhibit coke deposition on the otherwise exposed tubing surface. Catalyst for promotion of thermal cracking is not required on such coking-inhibitive coating. Indeed, Trotter, Jr. is silent on carrying catalyst on the surface of the inorganic coating.

Claim 1 of the present application requires that "at least a portion of the exposed inorganic material comprises a catalyst that promotes a hydrocarbon reaction to produce an olefin." Therefore, contrary to the Examiner's assertion, Trotter, Jr. does not disclose the present inventive furnace component as claimed in claim 1, either explicitly or implicitly.

In addition, Applicants have further limited the catalyst promoting the production of olefin to those selected from the group consisting of rare earth metals, Au, Pt, Pd, Ir, Rh, Ru, Co, Cr, Fe, Mo and their corresponding compounds. Trotter, Jr. does not disclose any of these catalysts.

Therefore, claim 1, as amended, is not anticipated by Trotter, Jr.

Claims 2, 3 and 5-9 and 11-15, all dependent from claim 1, should therefore NOT be anticipated by Trotter, Jr. The Examiner's rejections thereof are thus traversed accordingly.

2. Rejections under 35 U.S.C. § 103

II. Item 5 of the Detailed Action

In this item, the Examiner rejected claims 16-19 under 35 U.S.C. § 103(a) as being unpatentable over Trotter, Jr. (United States Patent No. 5,807,616A).

The Examiner asserted, by reiterating his rejection in the Office action of April 25, 2003, that

carrier (i.e., area exposed to the reaction), is active. As disclosed in the present application, the catalyst, or the catalytically active component, is comprised in the inorganic material of the furnace component as claimed in claim 1 of the present application. It can be present within the body of the inorganic material. The wording of claim 1 of the present application that "at least a portion of the exposed inorganic material comprises a catalyst" stipulates that the catalyst is present in, or carried on, at least a portion of the exposed inorganic material, i.e., at least a portion of the surface exposed to the hydrocarbon reaction. It should be noted that, in the submission of August 25, 2003, Applicants never stated that the catalyst is ONLY carried on the surface of the inorganic material of the present application. Rather, Applicants merely stressed that the reference, Trotter, Jr., does not contain a disclosure of catalyst present in, or carried on, the surface of the inorganic coating as disclosed therein.

[w]ith respect to claim 16, it would have been obvious to one of ordinary skill in the art at the time the invention was made to add a second catalyst since the duplication of existing elements is well within the skill in the art. It is held that the duplication of the above disclosed elements would inherently function to promote carbon gasification.

Again, Applicant submits that Trotter, Jr. does not disclose or suggest the presence of a catalyst promoting a hydrocarbon reaction that produces olefin selected from the group consisting of rare earth metals, Au, Pt, Pd, Ir, Rh, Ru, Co, Cr, Fe, Mo and their corresponding compounds, much less a catalytic system comprising two catalysts.

With respect to claims 17-19, the Examiner asserted that “[Trotter, Jr.] discloses wherein the catalyst is chosen from the group consisting of rare earth metals, precious metals, transition metals, non-metals and their corresponding compounds (col. 3, lines 54-60).” Col. 3, lines 54-60 of Trotter, Jr. are provided as follows:

Any glass-ceramic material that meets these several conditions may be employed. The alkaline earth metal borates and borosilicates and alkaline earth metal silicates are particularly suitable. In general, based on properties, alkali metal silicates and aluminosilicates are less suitable due to physical and/or chemical incompatibility, including low coefficient of thermal expansion.

Applicants submit that this paragraph discloses the composition of the inorganic coating. It is irrelevant to the catalyst promoting the hydrocarbon reaction that produces olefin selected from the group consisting of rare earth metals, Au, Pt, Pd, Ir, Rh, Ru, Co, Cr, Fe, Mo and their corresponding compounds.

III. Item 6 of the Detailed Action

In this item, the Examiner rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Trotter, Jr. (United States Patent No. 5,807,616A) further in view of Muckelroy (United States Patent No. 3,812,442A).

The Examiner asserted that though Trotter, Jr. teaches “borosilicates are a glass-ceramic material which can be used, [Trotter, Jr.] is silent as to a composition as claimed. Muckelroy teaches wherein a borosilicate with MgO and P₂O₅ in the weight percents claimed are common types of borosilicates known.” Thus the Examiner held that the claim 4 was obvious.

Applicants respectfully traverse this rejection.

Regardless of the Examiner’s assertion supra regarding the disclosure of borosilicate glass-ceramic material, since Trotter, Jr. does not disclose or suggest that catalyst is present

in (or carried on) the exposed inorganic material, the combination of Trotter, Jr. and Muckelroy does not render claim 4 obvious.

3. Conclusion

Based upon the above amendments, remarks, and papers of record, Applicants believe the pending claims 1-9 and 11-19 of the above-captioned application are in allowable form and patentable over the prior art of record. Applicants respectfully request reconsideration of the pending claims and a prompt Notice of Allowance thereon.

Applicants believe no extension of time is necessary to make this Response timely. Should Applicants be in error, Applicants respectfully request that the Office grant additional time extension pursuant to 37 C.F.R. § 1.136(a) as necessary to make this Response timely, and hereby authorize the Office to charge any necessary fee or surcharge with respect to said time extension to the deposit account of the undersigned firm of attorneys, Deposit Account 03-3325.

The undersigned attorney is granted limited recognition by the Office of Discipline and Enrollment of the USPTO to practice before the USPTO in capacity as an employee of Corning Incorporated. A copy of the document granting such limited recognition either is submitted herewith or has been previously submitted for the record.

Please direct any questions or comments to the undersigned at (607) 248-1253.

Respectfully submitted,

CORNING INCORPORATED



Siwen Chen
Limited Recognition
Corning Incorporated
Patent Department
Mail Stop SP-TI-03-1
Corning, NY 14831

Date: January 19, 2004

Date of Deposit: 1-19-04

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date indicated above with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.



Colleen E. Doherty